

HP StorageWorks

4000/6000/8000 Enterprise Virtual Array connectivity 5.0B for HP-UX release notes

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About this document

This section describes the content reflected in this document, including:

- [Release notes information](#)
- [Intended audience](#)

Release notes information

These release notes cover the following topics:

- [New features](#)
- [EVA storage system](#)
- [EVA compatability](#)
- [Operating constraints](#)
- [Storage System Scripting Utility for EVA](#)
- [Avoiding problem situations](#)

Intended audience

This document is intended for use by:

- Customers who purchased the HP StorageWorks 4000/6000/8000 Enterprise Virtual Array (EVA) to use with an HP-UX operating system
- HP customer service personnel responsible for installing and maintaining devices connected to the EVA

Accessing future product updates

HP strongly recommends that customers sign up online using the Subscriber's choice web site:

<http://www.hp.com/go/e-updates>.

- Subscribing to this service provides you with e-mail updates on the latest product enhancements, newest versions of drivers, and firmware documentation updates as well as instant access to numerous other product resources.
- After signing up, you can quickly locate your products by selecting **Business support** and then **Storage** under Product Category.

New features

This release includes the following major enhancements:

- Support is provided for EVA4000/6000/8000 controller software 5.02.
- Support is provided for boot from SAN through the switch.
- Customers now have the option of native multipathing functionality. Secure Path for HP-UX is no longer *required*.
Customers may now choose HP-UX pvLinks naive multipath solutions. For more information about pvlinks, see your HP-UX operating system documentation.
- Support is provided for Veritas Storage Foundation and Storage Foundation/HA Suite 3.5 on HP-UX 11iV1.0.

EVA storage system

EVA documentation

For a complete library of EVA and related documentation, see the following web sites:

<http://www.hp.com/go/eva4000>

<http://www.hp.com/go/eva6000>

<http://www.hp.com/go/eva8000>

Product support information

This document contains the current product information at the release of controller software 5.02.

For the latest product support release information and downloads for storage products, see the following web site:

<http://h18006.www1.hp.com/storage/index.html>

Supported configurations

Supported configurations are described in the *Enterprise Virtual Array QuickSpecs*; see the following web site:

<http://h18006.www1.hp.com/storage/arrayssystems.html>

The extended interoperability of the heterogeneous SAN allows you to mix several types of HP StorageWorks storage systems. The *HP StorageWorks SAN design reference guide* is a detailed guide for SAN configurations and is available at the following web site:

<http://h18004.www1.hp.com/products/storageworks/san/documentation.html>

EVA compatibility

Operating system support

Table 1 lists the operating system specifications.

**NOTE:**

Table 1 contains minimum-level operating system specifications at the time of the EVA4000/6000/8000 release. Some component versions may change due to revision. For the latest information, see the following web site: <http://h18006.www1.hp.com/storage/index.html>.

Table 1 Operating system specifications

HP-UX OS version	Clustering	FCA (HBA)	Adapter firmware	Adapter driver version (minimum)
11.00	MC/Service Guard with PvLinks	A5158A 1GB PCI	Native	For driver version information, see www.hp.com/go/softwaredepot
	A11.14	A6685A 1GB HSC	Native	
	A11.15			
	A11.16 or later	A6795A 2GB PCI	Native	
11iV1.0	MC/ServiceGuard with PvLinks	A5158A 1GB PCI	Native	For driver version information, see www.hp.com/go/softwaredepot
	A11.14,	A9784A	Native	
	A11.15,	A6685A	Native	
	A11.16 or later	1GB HSC		
	VERITAS Foundation Suite	A6795A 2GB PCI	Native	
	Foundation Suite/HA version 3.5	A6826A	Native	
		A9782A	Native	
11iV2.0	MC/ServiceGuard with PvLinks	A6795A 2GB PCI	Native	For driver version information, see www.hp.com/go/softwaredepot
	A11.15 or later	A9782A 2GB	Native	
		A9784A 2GB	Native	
		AB465A 2GB	Native	

Table 2 lists the minimum patch revisions.

Table 2 Patch revisions

HP-UX version	Minimum patch revision
11.00	PHKL_30511 EVA cumulative patch
11iV1.0	Hardware Enablement Bundle HWEnable 11iB.11.11.0312.4 PHKL_29985 (VxFS cumulative) PHKL_29826 – getmount_entry PHKL_27266 – (u)mount performance PHKL_28984 – Fibre Channel mass storage patch PHKL_28695 VM patch PHKL_28238 Early KRS PHKL_27321 Early KRS PHKL_28569 WSIO patch PHKL_29047 SCSI IO cumulative patch PHKL_30218 Dump Patch2 for EVA support PHKL_30219 Dump Patch1 for EVA support PHKL_30511 EVA cumulative patch PHKL_30622 LVM cumulative patch PHCO_29495 libc cumulative patch PHCO_29905 mount(1M) cumulative patch PHCO_27957 umount(1M) cumulative patch PHCO_27958 mountall cumulative patch PHCO_27959 umountall(1M) cumulative patch PHCO_28651 VxVM Enterprise Administrator svc patch PHCO_28656 VxVM Enterprise Administrator patch
11iV2.0	PHKL_30511 EVA cumulative patch

Switch support

This release supports the Fibre Channel switches and firmware versions listed in the *HP StorageWorks SAN design reference guide*, available at the following web site:

<http://h18000.www1.hp.com/products/storageworks/san/documentation.html>



NOTE:

HP recommends that you do not mix switch firmware versions in your SAN. It is considered a best practice to uniformly upgrade all switches in the SAN.

Multiple-path support

HP-UX with EVA storage requires multipathing software on each host to achieve high-availability, multiple-path capability.

You now have the option of native multipathing functionality. Secure Path for HP-UX is no longer *required*.

You may now choose HP-UX pvLinks naive multipathing solutions. For more information about pvLinks, see your HP-UX operating system documentation.

Single-path support

HP-UX servers require a single Fibre Channel adapter (FCA) to support single-path mode.



NOTE:

Single-path mode should not be used in mission critical environments.

Supported servers

Table 3 lists the EVA-compatible HP-UX servers.

Table 3 EVA compatible HP-UX servers

PA Risc	rp24xx	rp54xx	rp34xx
	rp44xx	rp7400	rp7420
	rp84xx	rp7410	L1000/2000
	Kx60	Kx70	Kx80
Itanium®	rx26xx	rx46xx	rx56xx
	zx2000	zx6000	SD Integrity
	rx16xx	rx1620	rx76xx
	rx86xx		

Operating constraints

You can find information about operating constraints specific to the EVA and Command View EVA in their respective release notes.

Failover/failback

Failback preference settings for the HSV controllers are specific to the operating system. Refer to the HP StorageWorks Enterprise Virtual Array release notes for details.

Storage System Scripting Utility for EVA

The HP StorageWorks Command View EVA software includes a Storage System Scripting Utility (SSSU). You can download the HP StorageWorks Command View EVA with SSSU from the following HP web site:

<http://h18006.www1.hp.com/products/storage/software/cmdvieweva/index.html>

Avoiding problem situations

The following sections describe problems that may arise and their solutions.

Known problems

You can find information about problems specific to the EVA and Command View EVA in their respective release notes.

Secure Path version

Secure Path is an optional EVA4000/6000/8000 multipathing solution. The current version of Secure Path for your operating system can be found at the following web site:

<http://h18006.www1.hp.com/products/storageworks/enterprise/specifications.html>

Codeload usage

When a maximally configured system is running at maximum load, multipathing timing constraints make codeload functionality ineffective. The system may time-out before codeload is complete. Therefore, you should perform controller software upgrades at an off-peak time.

Logical Volume Manager

When creating snapshots or clones of a device that is managed by Logical Volume Manager (LVM), take care to properly configure LVM. After creating a snapshot or clone of a physical volume, always run `vgchgid(1M)` to break the association between the volume group and the snapshot or clone. Otherwise, snapshots or clones appear to LVM as an alternate path to the original physical volume. This could lead to data corruption if the snapshot or clone is later added to the volume group using `vgextent(1M)`, `vgimport(1M)`, or `vgscan(1M)`.

When a path to a device managed by LVM becomes unavailable because of a controller, path link, switch, or HBA failure, I/O requests can be delayed for up to one minute after the failure. As a result, the responsiveness of mirrored logical volumes may be affected briefly. When a physical volume becomes unavailable, applications may experience a delay while an I/O request to that physical volume times out. By default, this delay takes 30 seconds, but you can change the time-out value using the `pvchange(1M)` command.

Overloaded EVA configurations

Persistent EVA overload may indicate an overloaded configuration and additional array host port resources may be required to match the configuration to the actual workload. Consult your local HP account or service representative for help to properly configure the EVA for your newly designed or existing configuration.

High-availability environment recommendations

In high-availability environments, under heavy I/O loads, you may experience I/O time-out conditions. If I/O timeouts occur, HP recommends that you use the `pvchange` command to increase the `IO_timeout` value from the default value of 30 seconds to no more than 60 seconds. Under heavy I/O load conditions, the increased `IO_timeout` value allows for longer I/O completion times and for LUN access delays if a controller failover condition occurs.



NOTE:

Ensure that you have HP MC/ServiceGuard configured properly. For details, go to the following web site:
<http://docs.hp.com/hpux/ha/index.html#ServiceGuard>

Selecting the management appliance

The drop-down menu for selecting the management appliance or cells does not work consistently. Use the following command to access the GUI for the SSSU:

```
# gsssu
```

In the command text box, enter the SSSU command you want to perform. For example:

```
select manager ip_address username=xxxx password=xxxx
```